COLORADO RIVER RECOVERY PROGRAM
FY 2003 ANNUAL PROJECT REPORT

RECOVERY PROGRAM
PROJECT NUMBER: 128a

I. Project Title: **Abundance Estimates for Colorado pikeminnow in the Middle Green River /Yampa River System**

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III. Project Summary:

Sampling conducted during this project is designed to obtain capture-recapture data needed to estimate abundance of Colorado pikeminnow *Ptychocheilus lucius* in the mainstem Green River upstream of the White River and the Yampa and White rivers. Abundance estimates of endangered Colorado pikeminnow are needed to better monitor population status and provide benchmarks against which progress toward recovery can be measured. Work began in spring 2000 and will conclude in 2004. The primary goal each year was to capture and mark as many Colorado pikeminnow as possible during at least three different springtime sampling occasions. The U.S. Fish and Wildlife sampled the White River, Utah Division of Wildlife Resources sampled the Green and Duchesne rivers, and Colorado State University sampled the Yampa River. Sampling occurred during spring runoff and ended before the pikeminnow spawning migration began. Electrofishing was the primary sampling technique in 2003. Trammel and fyke nets were also used on the Yampa River. In 2000, 1068 Colorado pikeminnow were captured, in 2001, 733 Colorado pikeminnow were captured, and in 2002, 322 Colorado

pikeminnow were captured. In

2003, 307 Colorado pikeminnow were captured during all sampling efforts. All Colorado pikeminnow capture totals are for fish 450 mm TL or greater.

IV. Study Schedule: Initial Year 2000
Final year 2004

V. Relationship to 2003 RIPRAP:
Green River Action Plan: Mainstem (pg. 27)
V. Monitor populations and habitat and conduct research to support recovery actions (Research, monitoring, and data management).
V.C. Conduct population estimate for Colorado pikeminnow
V.C.1. Middle Green River (including Yampa and White rivers)

VI. Accomplishment of FY 2003 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Task 1. Feb.-March. Literature research, order and prepare equipment, develop standard protocol for field crews.

Task 2. April. Scout locations, final equipment preparation.

Task 3. Apr.-July. Sample each river on at least three sampling occasions.

Task 4. September. Sample appropriate canyon reaches to evaluate fish movement.

Task 5. Jan- Sept Sampling team coordination, data entry, and analysis.

Task 6. December. Write Recovery Program summary report.

Most tasks were completed in year 2003. The Standard Operating Procedure Manual provided an overview of the work, sampling approach, endangered fish handling and tagging procedures and standardized data forms. Periodic updates among crews during the sampling period allowed refinements to sampling approaches (Tasks 1 & 5). Crews conducted reconnaissance of remote river reaches to find boat launch and take-out sites and obtained permission to access some sites on private property. In addition, all three crews rigged new equipment specific for the sampling approach (Task 2). The most effective design was systematically sampling both shorelines with electrofishing gear and using the block and shock method of sampling in backwaters. High Yampa River flows in 2003 flooded many backwaters, which allowed for expanded sampling effort with trammel nets and fyke nets. Three sampling occasions were completed in the White River and Green River and four were completed in the Yampa River in 2003. Data for

the second and third sampling pass on the White River may need to be combined because of temporal overlap (Table 1). We need to further evaluate the usefulness of captures for abundance estimation from the last sampling occasion conducted on each river system because of the possibility of fish movement out of some reaches. We will determine if Colorado pikeminnow started their spawning migration based on declining capture rates relative to prior sampling occasions and on state of reproductive readiness of fish when captured.

In 2003, sampling occurred mid-April through mid-June (Task 3, Table 1). Electrofishing effort included 194 hours on the Green River, 177 hours on the White River, and 218 hours on the Yampa River. Two electrofishing boats were used in all reaches on all three rivers. Sampling effort on the Yampa River included over six hours using the block and shock method and 723 hours of fyke-net sets in backwaters and flooded tributaries. Middle Green River Colorado pikeminnow captured in 2003 during all sampling occasions totaled 155 (n = 682 in 2000, 360 in 2001, and 107 in 2002). A total of 119 Colorado pikeminnow were captured in the White River in 2003 (n = 294 in 2000, 229 in 2001, and 182 in 2002), and 33 were captured in the Yampa River in 2003 (n = 92 in 2000, 144 in 2001, and 33 in 2002). In 2003, a total of ten Colorado pikeminnow were recaptured in the Green River, (n = 83 in 2000, 35 in 2001, and six in 2002), nine in the White River (n = 27 in 2000, 23 in 2001, and 21 in 2002), and none in the Yampa River (n = 7 in 2000, 20 in 2001, and none in 2002). Recaptures reported are for fish 450 mm TL or greater, and captured, released, and re-captured within the same sampling season and does not include recaptured fish that were marked in previous years.

Six hundred-eighteen razorback suckers and one razorback x flannelmouth sucker hybrid were also captured in the Green River and were distributed throughout the entire middle Green River sampling reach. Eight razorback suckers were captured in the lowermost 24 river miles on the White River.

VII. Recommendations: Complete data analysis and write the final report. The final report will be combined with results for the Green River from downstream of the White River to the confluence with the Colorado River.

VIII. Project Status: Field work completed.

IX. FY 2003 Budget Status

A. Funds Provided: $160,000
B. Funds Expended: $157,000
C. Difference: $3,000, for data analysis and report writing remains.

D. Percent of the FY 2003 work completed, and projected costs to complete: about 80% completed, no additional funds needed, remaining funds for completion and review of annual abundance estimate.

E. Recovery Program funds spent for publication charges: None

X. Status of Data Submission:

PIT Tag data files will be submitted by individual agencies (USFWS, UDWR, and CSU) by January 2004.

XI. Signed: *Kevin R. Bestgen and John Hawkins* 11-14-2003
Reporting Principal Investigator Date

Filename= 128aMiddleGreenCPMpopest-03.wpdD:\Documents\RIP Annual Reports\Year 2001 Annual Reports\FINAL Middle Green R CPM Pop Estimate-Annual Rpt 2001.wpd

Table 1. Sampling dates and effort for middle Green, White, and Yampa River population of Colorado pikeminnow. All fish reported are 450 mm TL or greater.

	Dates	Days Sampled	River Miles Sampled	Total Effort (hours)			Number of Pikeminnow Capture Events[1]
				Trammel/ Electro-fishing	Fyke Nets	Electro-fishing	
Green River							
Trip 1	April 22 – May 12	10	334-246	0	0	67	38
Trip 2	May 13 – 27	10	334-246	0	0	65	54
Trip 3	May 28 – June13	11	334-246	0	0	62	63
Totals		31		0	0	194	155
Yampa River							
Trip 1	April 24 - May 3	9	119-49	.54	124	41	4
Trip 2	May 12 – 20	8	119-49	.92	106	57	5
Trip 3	May 28 - June 14	9	119-44	3.85	342	52	22
Trip 4	June 15 – 25	9	119-44	.90	151	68	2
Totals		35		6.21	723	218	33
White River							
Trip 1	April 21 – 30	8	104-0	0	0	63	56
Trip 2	April 29 – May 15	7	104-0	0	0	53	27
Trip 3	May 5 - 29	8	108-0	0	0	61	36
Totals		23				177	119

[1] Total number of pikeminnow captured including recaptures.